PRESCHOOL EXIT ASSESSMENT PROJECT

2003-04

REPORT OF FINDINGS

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PRESCHOOL EXIT ASSESSMENT PROJECT
REPORT OF FINDINGS—2003-04

The Missouri Preschool Assessment Project began during the 1998-99 school year as an effort to gather information about the school readiness of children as they exit public preschools—primarily those funded by Title I of ESEA and the Missouri Preschool Program (MPP). The study, coordinated by the Project Construct National Center, was conducted by Research & Training Associates, Inc. of Overland Park, Kansas.

Preschool teachers were provided professional development opportunities to observe and rate their students' preparation for kindergarten using a *School Entry Profile*. The instrument consists of 65 items that reflect important entry-level skills, knowledge, behaviors, and dispositions in seven areas of development. All public preschool teachers participated in the project during the first year and assessed 4,839 exiting preschoolers in approximately 220 schools statewide. During 1999-00, preschool teachers assessed 5,956 exiting preschoolers in approximately 300 schools statewide. During 2000-01, preschool teachers assessed 7,059 preschoolers in approximately 335 schools. During 2001-02, preschool teachers assessed 7,500 exiting preschoolers in approximately 360 schools. During 2002-03, preschool teachers from 364 public schools and 30 private providers assessed 8,034 exiting preschoolers. During 2003-04, preschool teachers from 363 public schools and 60 private providers assessed 8,683 exiting preschoolers. This report provides results of the sixth year study.

INSTRUMENTATION

The *School Entry Profile*[1] is built on prior instrumentation efforts and has been used to assess the skills of kindergartners entering Missouri public schools. Aided by an expert panel of early childhood specialists, early childhood educators, kindergarten teachers, and DESE directors of early childhood education and Title I, the instrument was designed to reflect areas of performance and assessment appropriate to kindergarten entry. The assessment was not designed and is not utilized to screen children for school entry or assign them to special programs.

The *School Entry Profile* is organized around seven conceptual areas that the expert panel agreed reflect important dimensions of school readiness and which build upon prior psychometric work in observational assessments in kindergarten. Conceptual areas and items measuring these areas were reviewed with the understanding that the skills and behaviors could be reliably observed within the beginning weeks of a school year. The areas identified include symbolic development, communication, mathematical/physical knowledge, working with others, learning to learn, physical development, and conventional knowledge.

Items for the symbolic development, communication, mathematical/physical knowledge, working with others, and learning to learn domains are assessed with a three-point scale: *almost always*, *occasionally/sometimes*, and *not yet/almost never*. Items comprising the physical development and conventional knowledge domains are scored *yes* and *no*.

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[1] See the *Student Observation Record* in Pfannenstiel, J.C. (1997). *Kindergarten learning environments and student achievement: A study of constructivist and traditional teaching approaches.* Overland Park, KS: Research & Training Associates, Inc.

Sixty-five items were either obtained from a previously developed instrument or were newly developed to reflect important kindergarten entry-level skills, knowledge, behaviors, or dispositions (see Table 6 in Appendix A for scales and scale items). It must be noted, however, that items do not measure the entirety of what should be taught or assessed in kindergarten.

Similar to prior year results, the psychometric properties of the scales yielded alpha coefficient reliabilities for the symbolic development, communication, mathematical/physical knowledge, working with others, and learning to learn scales that meet or exceed .85, greatly exceeding the .70 criterion generally accepted for reliability (see Tables 1-4 in Appendix A). The conventional knowledge scale demonstrated a .69 reliability coefficient, slightly lower than the minimum criterion. The conventional knowledge scale demonstrates greater reliability (.79) among the kindergarten entry population.[2] The physical development items did not form a scale; thus, the five items are reported as separate variables.

In addition, preschool teachers provided information on preschoolers' age (in months), racial/ethnic background, gender, eligibility for free or reduced price lunch, length of preschool attendance (less than one year, one year, or two years), and whether preschoolers received special education or Title I services.

TRAINING FOR PRESCHOOL TEACHERS

All public preschool teachers were required to attend a one-day training session on observation-based techniques designed to assess children's skills, knowledge, and social development. The objectives of the training sessions include the following:

- To gain awareness of the importance of the Preschool Assessment Project within the broader scope of the state action plan to achieve the goal of ensuring that all students enter kindergarten ready to be successful in school.
- To understand that the purpose of the Preschool Assessment Project is to collect information to inform preschool practices and to respond to the accountability requirement for the evaluation of preschool programs funded under Title I.
- To recognize that the *School Entry Profile* consists of observations of routine activities that occur in the preschool classroom.
- To ensure that preschool teachers are valid and reliable administrators of the *School Entry Profile.*

To maintain consistency in rating times for all exiting preschoolers, teachers were asked to rate all children on one domain at a time. The recommended order of ratings asked teachers to begin with the physical development domain because it is easy to observe.

[2] Pfannenstiel, J.C. (2003*). School entry assessment project: Report of findings.* Jefferson City, MO: Missouri Department of Elementary and Secondary Education.

PUBLIC PRESCHOOL POPULATION

Public preschools represented in the study in the 2003-04 school year were operated in approximately 363 schools, similar to the prior year, and 60 private providers, double the number from 2002-03. Approximately two-thirds of preschoolers attended schools funded by Title I only, 26% were funded by MPP only, and 4% were funded by a combination of Title I and MPP (see Table 1).

The average age of exiting preschoolers is 5.6 years and ranges from 4 to 7 years. A somewhat higher percentage of males (55%) than females (46%) is represented in the public preschool population (see Table 2). The racial/ethnic distribution of 20% minority students is somewhat higher than the 13% of minority students in the statewide school population. Fifteen percent of public preschoolers are African American.

Preschool teachers indicate that 43% of the preschoolers are eligible for free or reduced price lunch (snacks) and 42% are ineligible; the teachers either did not know, or did not report, the eligibility of 15% of the preschoolers. Fifteen percent of the preschoolers participated in early childhood special education.

Among the exiting preschoolers, 26% are known by teachers to also have participated in preschool as a 3-year-old. Approximately 11% of the exiting preschoolers participated for less than one year.

TEACHER ASSESSMENTS OF PRESCHOOLERS

Preschool teachers assessed children on 65 items in domains of physical development, symbolic development, communication, mathematical/physical knowledge, working with others, learning to learn, and conventional knowledge. Percentage distributions for each item by domain are contained in Table 6 in Appendix A. Complete scale scores for each of the six scales were obtained for 95-99% of the exiting preschoolers.

Teachers assessed each child's physical development on five indicators with a simple *yes/no* response format. Almost all of the children (99%) were described as physically active and demonstrated gross motor skills (e.g., running, jumping, climbing stairs, or skipping); 95% demonstrated fine motor skills (e.g., control of scissors or pencil) at preschool exit. This compares favorably to 82% of the children statewide who demonstrated fine motor skills at kindergarten entry.[3] Preschool teachers indicated that almost all of the children (99%) appeared to be healthy and practice personal hygiene (98%).

[3] See Pfannenstiel, J. (2001). *School entry assessment project: Report of findings*. Jefferson City, MO: Department of Elementary and Secondary Education.

Table 1. Percentage Distribution of Sources of Funding for Public Preschools

Title I only	67
MPP only	26
Title I & MPP	4
	(8786)

Table 2. Percentages of Public Preschoolers with Selected Socio-Demographic Characteristics

Racial/Ethnic Characteristics*	**1998-99 (N=4839)**	**1999-00 (N=5956)**	**2000-01 (N=7059)**	**2001-02 (N=7500)**	**2002-03 (N=8034)**	**2003-04 (N=8683**
American Indian or Alaska Native	.4	.4	.4	.4	.4	.4
Black or African American	16.7	17.1	14.7	14.6	14.6	15.1
Native Hawaiian or other Pacific Islander	.3	.3	.3	.3	.4	.3
Asian	.6	.9	1.0	1.2	.7	1.1
Hispanic or Latino	2.5	2.7	2.5	2.7	3.4	3.4
White	81.0	80.5	82.7	82.5	82.8	79.0
Percentage indicating any minority	20.6	22.2	18.8	19.0	19.6	20.4
Gender						
Male	53.0	53.8	53.6	53.3	54.1	54.5
Female	46.7	46.2	46.4	46.7	45.9	45.5
Poverty						
Qualifying for free/reduced lunch	36.2	40.4	41.3	37.3	38.8	42.8
Not qualifying for free/reduced lunch	33.3	42.0	36.2	45.8	43.5	42.4
Missing data	30.5	17.6	22.6	16.9	17.7	14.9
Preschool Participation						
Participated as 3-year-old	19.5	20.7	27.3	26.9	28.3	26.3
4-year-olds participating <1 yr.	6.0	10.4	4.1	8.4	9.3	10.9
Special Education						
Percentage in Special Education	9.0	11.2	12.1	12.3	13.5	14.7

*Percentages total to more than 100 due to multiple racial/ethnic identities.

Teacher assessments of children's performance on the six scale domains are presented in Table 3. Sixty percent of exiting preschoolers score at the ceiling in symbolic development, 43% score at the ceiling in mathematical/physical knowledge, 49% score at the ceiling on working with others, and 58% score at the ceiling in learning to learn; this compares favorably to the fewer than 30% of entering kindergartners in 2002 who scored at the ceiling on these scales (see Table 4). Thirty-nine percent of exiting preschoolers and 28% of fall 2002 entering kindergartners score at the ceiling on conventional knowledge (see Tables 3 and 5). Nineteen percent of exiting preschoolers, compared to 10% of entering kindergartners, score at the ceiling on the lengthy 19-item communication scale.

On average, exiting 2004 public preschoolers score significantly and meaningfully higher than the average entering kindergartner on each scale (see Tables 3 and 4.) In the first two years of the study, exiting preschoolers scored similarly on all scales to entering kindergartners who had attended preschool, whether public or private. Exiting preschoolers in 2001, 2002, and 2003 scored higher on all but the conventional knowledge scale ($p < .0001$) than did entering kindergartners who had attended preschool prior to school entry (see Tables 3 and 5).

To investigate whether kindergarten teachers would consider exiting preschoolers *prepared for kindergarten*, mean scores for each rating for preschoolers were compared to the ranges of scores that kindergarten teachers used to delineate *above average*, *average*, or *below average preparation* for entering kindergartners.[5] On each scale, preschool teachers rate only 3-11% of the children as being within the score ranges of *below average preparation*; this compares to 25% of entering public school kindergartners who are rated as having *below average* preparation by their teachers (see Table 6). Conversely, approximately 65-79% of exiting preschoolers are rated within the score ranges of *above average* preparation on the various scale scores. Only 30% of entering kindergartners meet that criterion.

[5] Entering kindergartners who were rated *above average* in their preparation for kindergarten score three-quarters of a standard deviation above the average score of 100 on all scales except communications, where they score almost a full standard deviation higher. Children rated of *average preparation* score almost exactly at the mean of 100. The 25% of children who were rated *below average* in their preparation for kindergarten were well below average—in almost all areas a full standard deviation below average. By any standard of comparison, kindergarten teachers use very stringent criteria for designating children "below average" in their preparation for kindergarten.

Table 3. Descriptive Statistics for Scale Scores for Exiting Public Preschoolers*

	Mean 1998-99	Mean 1999-00	Mean 2000-01	Mean 2001-02	Mean 2002-03	2003-04 Mean	s.d.	Range	% at Ceiling	N
Symbolic Development	18.7	19.2	19.4	19 .5	19.6	19.8	2.1	7-21	60	7495
Communication	44.3	45.7	46.4	46.7	47.5	47.8	6.5	18-54	19	7291
Mathematical/ Physical Knowledge	25.8	26.5	26.9	27.0	27.0	27.5	3.7	10-30	43	7463
Working with Others	18.3	18.8	19.0	18.9	19.1	19.2	2.5	7-21	49	7474
Learning to Learn	24.4	24.9	25.1	25.0	25.2	25.4	2.4	9-27	58	7495
Conventional Knowledge	9.6	9.7	9.7	9.8	9.9	9.9	1.3	1-11	39	7386

Table 4. Descriptive Statistics for Scale Scores for Fall 2002 Entering Kindergartners*

	Mean	s.d.	Range	% at Ceiling	N
Symbolic Development	17.1	3.6	7-21	26	3018
Communication	39.5	9.9	18-54	9	2895
Mathematical/Physical Knowledge	22.9	5.9	10-30	19	3004
Working with Others	16.6	3.8	7-21	22	3008
Learning to Learn	21.9	4.6	9-27	19	3010
Conventional Knowledge	9.0	2.2	1-11	28	2951

Table 5. Descriptive Statistics for Scale Scores for Fall 2002 Entering Kindergartners Who Attended Preschool*

	Mean	s.d.	Range	% at Ceiling	N
Symbolic Development	17.4	3.4	7-21	28	1760
Communication	40.8	9.6	18-54	10	1690
Mathematical/Physical Knowledge	23.7	5.6	10-30	21	1753
Working with Others	16.9	3.6	7-21	24	1757
Learning to Learn	22.4	4.4	9-27	22	1757
Conventional Knowledge	9.3	2.0	1-11	34	1725

* Excluding special needs children.

Table 6. Percentage of Exiting 2003-04 Preschoolers Scoring within Entering 2002 Kindergarten Ranges in Preparation for Kindergarten*

	Average Summed Scores For Kindergartners in Fall 2002			% of 2003 Preschoolers in K Score Range		
	Above Average Preparation (30%)	Average Preparation (45%)	Below Average Preparation (25%)	Above Average Preparation	Average Preparation	Below Average Preparation
Symbolic Development	19.1	17.4	14.5	79	11	10
Communication	48.5	39.4	28.8	65	29	5
Mathematical/ Physical Knowledge	27.8	23.3	16.5	71	23	6
Working with Others	18.9	16.8	13.7	69	20	11
Learning to Learn	25.2	22.2	17.8	74	20	5
Conventional Knowledge	10.5	9.4	6.3	67	30	3

Demographic and background characteristics of preschoolers were investigated for their relationship to preschool exit performance. Male preschoolers are rated significantly lower than females on all scales ($p < .0001$); overall, males are rated slightly below average and females are rated slightly above average on all domains (see Table 7). The largest differences in mean performance between males and females are on the communication scale; the lowest difference in mean performance is on the mathematical/physical knowledge scale.

On all scales, preschoolers of racial/ethnic minority background score significantly lower than non-minority preschoolers ($p < .0001$). The largest differences between minority and non-minority preschoolers are on the communication, mathematical/physical knowledge, and working with others scales (see Table 8).

Preschoolers who are eligible for free or reduced price lunch score significantly lower than those who are ineligible on all scales ($p < .0001$). The 15% of preschoolers with missing data on eligibility for free or reduced price lunch score at the average on all scales and do not differ significantly from preschoolers who are eligible or preschoolers who are not eligible (see Table 9).

* Includes special education preschoolers.

Table 7. Means of Raw and Standardized Scale Scores of Exiting Preschoolers by Gender*

	Males			Females		
	Raw	Standardized	(N)	Raw	Standardized	(N)
Symbolic Development	19.5	98.3	(3895)	20.0	101.8	(3511)
Communication	46.6	97.3	(3792)	49.0	102.8	(3416)
Mathematical/Physical Knowledge	27.2	98.7	(3886)	27.8	101.3	(3490)
Working with Others	18.8	97.6	(3892)	19.7	102.6	(3545)
Learning to Learn	25.0	97.4	(3901)	25.9	102.8	(3505)
Conventional Knowledge	9.8	98.3	(3844)	10.1	101.7	(3455)

Table 8. Means of Raw and Standardized Scale Scores of Exiting Preschoolers by Minority Status*

	Minority			Non-Minority		
	Raw	Standardized	(N)	Raw	Standardized	(N)
Symbolic Development	19.5	97.8	(1579)	19.8	100.6	(5769)
Communication	46.5	97.1	(1519)	48.1	100.7	(5637)
Mathematical/Physical Knowledge	26.6	96.5	(1570)	27.7	100.9	(5749)
Working with Others	18.8	97.6	(1576)	19.3	100.6	(5752)
Learning to Learn	25.1	98.3	(1575)	25.5	100.4	(5773)
Conventional Knowledge	9.8	98.3	(1551)	9.9	100.4	(5693)

Table 9. Means of Raw and Standardized Scale Scores of Exiting Preschoolers by Eligibility for Free/Reduced Price Lunch*

	Eligible for Free/ Reduced Price Lunch			Ineligible for Free/ Reduced Price Lunch			Missing Data on Eligibility		
	Raw	Standardized	(N)	Raw	Standardized	(N)	Raw	Standardized	(N)
Symbolic Development	19.7	99.3	(3151)	19.9	101.2	(3151)	19.5	98.3	(1105)
Communication	47.0	98.1	(3043)	48.6	101.8	(3086)	47.7	99.7	(1080)
Mathematical/Physical Knowledge	27.0	98.0	(3137)	27.9	101.8	(3133)	27.6	100.4	(1107)
Working with Others	19.1	98.9	(3142)	19.4	100.9	(3145)	19.2	100.1	(1099)
Learning to Learn	25.2	98.5	(3153)	25.6	101.1	(3152)	25.5	100.8	(1102)
Conventional Knowledge	9.8	98.0	(3107)	10.1	102.0	(3100)	9.9	99.4	(1093)

* Excluding special education preschoolers

Multiple regression analyses were employed to investigate the predictive power of background characteristics (gender, age, poverty, racial/ethnic minority status) and length of preschool attendance on preschool exit performance. These analyses indicate that controlling for all other predictors, the age of the child, gender, and length of preschool participation are significant predictors of achievement on all scales ($p < .0001$). Similarly, poverty status of the child is a significant negative predictor on all scales ($p < .0001$). Racial/ethnic minority status is a negative predictor on all scales, but the probability level is greatly reduced for the conventional knowledge scale (see Tables 10-15).

While all variables achieved significance as predictor variables, some background characteristics demonstrated more importance as predictors of achievement as measured by the standardized beta coefficients. Gender and age are the most important predictors of communication skills; gender, age, and poverty status are the most important predictors of conventional knowledge and learning to learn. The importance of gender diminishes for mathematical/physical knowledge, where age and minority status emerge as the most important predictors. Gender provides the best predictor of children's ability to work with others; male children score lower on this scale.

Despite these significant findings, the amount of variation on each scale accounted for by the combination of background characteristics is small, ranging from 3% for symbolic development to 10% for communication. This indicates that factors other than background characteristics, which are unmeasured by this study, account for the vast majority of variation in performance of exiting preschoolers.

Table 10. Summary of Stepwise Multiple Regression Analysis on Symbolic Development*

Step Variable	*B*	*SE*	β	*R5* Change
Gender	.52	.05	.13	.015
Age	.55	.08	.09	.007
Minority Status	-.29	.06	-.05	.006
Eligibility for Free/Reduced Lunch	-.21	.05	-.05	.003
Length of Preschool Attendance	.26	.05	.05	.002

Constant = 15.92; df = 6169
R5 = .03; Adj *R5* = .03; *F* = 42.02; *p* = < .0001

* Excluding students identified for Pre-K special services.

Table 11. Summary of Stepwise Multiple Regression Analysis on Communication*

Step Variable	*B*	*SE*	β	*R5* Change
Gender	2.60	.16	.20	.036
Age	3.43	.24	.17	.027
Eligibility for Free/Reduced Lunch	-1.53	.16	-.12	.019
Length of Preschool Attendance	1.33	.16	.10	.011
Minority Status	-1.00	.20	-.06	.004

Constant = 24.21; df = 6001
R5 = .10; Adj *R5* = .10; *F* = 127.73; *p* = < .0001

Table 12. Summary of Stepwise Multiple Regression Analysis on Mathematical/Physical Knowledge*

Step Variable	*B*	*SE*	β	*R5* Change
Age	1.92	.14	.17	.027
Eligibility for Free/Reduced Lunch	-.78	.09	-.11	.017
Minority Status	-.84	.11	-.09	.009
Gender	.69	.09	.10	.009
Length of Preschool Attendance	.56	.09	.08	.006

Constant = 15.67; df = 6136
R5 = .07; Adj *R5* = .07; *F* = 89.25; *p* = < .0001

Table 13. Summary of Stepwise Multiple Regression Analysis on Working With Others*

Step Variable	*B*	*SE*	β	*R5* Change
Gender	.87	.06	.18	.029
Age	.73	.09	.10	.009
Minority Status	-.43	.08	-.07	.008
Eligibility for Free/Reduced Lunch	-.27	.06	-.05	.003
Length of Preschool Attendance	.17	.06	.03	.001

Constant = 13.92; df = 6155
R5 = .05; Adj *R5* = .05; *F* = 64.12; *p* = < .0001

* Excluding students identified for Pre-K special services.

Table 14. Summary of Stepwise Multiple Regression Analysis on Learning to Learn*

Step Variable	*B*	*SE*	β	*R5* Change
Gender	.93	.06	.19	.033
Age	.87	.09	.12	.013
Eligibility for Free/Reduced Lunch	-.38	.06	-.08	.009
Minority Status	-.32	.08	-.05	.003
Length of Preschool Attendance	.21	.06	.04	.002

Constant = 19.15; df = 6172
R5 = .06; Adj *R5* = .06; *F* = 77.59; *p* = < .0001

Table 15. Summary of Stepwise Multiple Regression Analysis on Conventional Knowledge*

Step Variable	*B*	*SE*	β	*R5* Change
Eligibility for Free/Reduced Lunch	-.36	.03	-.14	.019
Age	.54	.05	.14	.017
Gender	.30	.03	.12	.015
Length of Preschool Attendance	.18	.03	.07	.005

Constant = 6.46; df = 6077
R5 = .06; Adj *R5* = .06; *F* = 90.70; *p* = < .0001

SPECIAL NEEDS PRESCHOOLERS

Approximately 14% of public preschoolers are provided special education services. Two-thirds of the public preschoolers identified for special education services are male and 13% are minority (see Table 16). Approximately 44% qualify for free or reduced price lunch, but 15% have missing data on eligibility.

Table 16. Percentages of Special Needs Public Preschoolers with Selected Socio-Demographic Characteristics

Percent Minority	13
Percent Male	66
Percent Qualifying for Free/Reduced Price Lunch	44
Percent with Missing Free/Reduced Lunch Data	15

Public preschoolers identified for special education services score, on average, at standardized scores ranging from 91-93, approximately one-half to three-fourths of a standard deviation below average (see Table 17). Male special needs children score slightly below female special needs

children on symbolic development ($p < .001$), communication ($p < .01$), working with others ($p < .001$), and learning to learn ($p < .0001$) (see Table 18). Minority special needs children score slightly below non-minority children on all scales (see Table 19). They score significantly lower on communication ($p < .05$) and mathematical/physical knowledge ($p < .05$). High poverty special needs children score significantly lower than non-poverty special needs students on communication ($p < .01$) and conventional knowledge ($p < .001$) (see Table 20).

Table 17. Descriptive Statistics for Scale Scores for Exiting Special Needs Public Preschoolers*

	Mean 1998-99 (N=416)	Mean 1999-00 (N=626)	Mean 2000-01 (N=814)	Mean 2001-02 (N=871)	2002-03 Mean	s.d.	Range	N
Symbolic Development	93.9	94.1	94.1	93.1	93.3	21.4	8-109	1207
Communication	92.1	93.0	93.1	91.9	92.4	19.1	31-114	1178
Mathematical/Physical Knowledge	93.3	92.7	92.7	92.2	91.9	20.9	29-110	1207
Working with Others	93.1	93.9	94.0	93.8	92.8	20.1	26-111	1210
Learning to Learn	93.5	94.0	93.6	93.2	91.9	21.8	-1-110	1209
Conventional Knowledge	91.9	92.0	91.3	91.6	91.1	23.5	-5-113	1195

Table 18. Means of Raw and Standardized Scale Scores of Exiting Special Needs Preschoolers by Gender

	Males			Females		
	Raw	Standardized	(N)	Raw	Standardized	(N)
Symbolic Development	18.6	91.8[2]	(794)	19.2	96.0	(413)
Communication	43.9	91.1[3]	(772)	45.6	94.9	(406)
Mathematical/Physical Knowledge	25.3	91.3	(793)	25.8	93.2	(414)
Working with Others	17.8	91.3[2]	(793)	18.5	95.7	(417)
Learning to Learn	23.8	90.0[1]	(791)	24.7	95.5	(418)
Conventional Knowledge	9.1	90.8	(787)	9.2	91.6	(408)

1 = $p < .0001$, 2 = $p < .001$, 3 = $p < .01$, 4 = $p < .05$

Table 19. Means of Raw and Standardized Scale Scores of Exiting Special Needs Preschoolers by Minority Status*

	Minority			Non-Minority		
	Raw	Standardized	(N)	Raw	Standardized	(N)
Symbolic Development	18.5	91.1	(157)	18.9	93.7	(1056)
Communication	43.0	88.8[4]	(153)	44.7	92.9	(1032)
Mathematical/Physical Knowledge	24.6	88.1[4]	(158)	25.6	92.5	(1055)
Working with Others	17.6	90.2	(158)	18.1	93.3	(1056)
Learning to Learn	23.9	91.1	(157)	24.1	92.1	(1058)
Conventional Knowledge	8.8	87.4	(156)	9.2	91.6	(1045)

1 = p < .0001, 2 = p < .001, 3 = p < .01, 4 = p < .05

Table 20. Means of Raw and Standardized Scale Scores of Exiting Special Needs Preschoolers by Eligibility for Free/Reduced Price Lunch*

	Eligible for Free/ Reduced Price Lunch			Ineligible for Free/ Reduced Price Lunch			Missing Data on Eligibility		
	Raw	Standardized	(N)	Raw	Standardized	(N)	Raw	Standardized	(N)
Symbolic Development	18.9	93.5	(544)	18.8	93.3	(499)	18.8	92.8	(175)
Communication	43.7	90.6[3]	(527)	45.3	94.3	(492)	44.4	92.2	(170)
Mathematical/Physical Knowledge	25.2	90.8	(541)	25.8	93.2	(501)	25.5	92.0	(176)
Working with Others	18.0	92.4	(543)	18.1	93.3	(500)	18.0	92.7	(176)
Learning to Learn	23.9	91.0	(545)	24.2	92.6	(500)	24.2	92.7	(175)
Conventional Knowledge	9.0	88.8[2]	(539)	9.4	93.9	(496)	9.0	89.7	(171)

1 = p < .0001, 2 = p < .001, 3 = p < .01, 4 = p < .05

APPENDIX A

Tables

Table 1. Means, Standard Deviations, Cronbach Alpha Reliability Estimates (in parentheses) and Intercorrelations of Scales, 1999-00

	Mean	sd	1	2	3	4	5	6
1. Symbolic Development	19.2	2.5	(85)					
2. Communication	45.7	7.2	66	(91)				
3. Mathematical/Physical Knowledge	26.5	4.1	59	79	(89)			
4. Working with Others	18.8	2.8	64	64	59	(86)		
5. Learning to Learn	24.9	2.8	65	69	65	77	(85)	
6. Conventional Knowledge	9.7	1.5	40	60	60	42	45	(63)

Note. N=5880.

Table 2. Means, Standard Deviations, Cronbach Alpha Reliability Estimates (in parentheses) and Intercorrelations of Scales, 2000-01

	Mean	sd	1	2	3	4	5	6
1. Symbolic Development	19.4	2.4	(84)					
2. Communication	46.4	7.1	64	(91)				
3. Mathematical/Physical Knowledge	26.9	4.0	59	81	(89)			
4. Working with Others	19.0	2.7	63	62	59	(86)		
5. Learning to Learn	25.1	2.8	65	70	68	78	(84)	
6. Conventional Knowledge	9.7	1.5	40	61	63	42	49	(64)

Note. N=7009.

Table 3. Means, Standard Deviations, Cronbach Alpha Reliability Estimates (in parentheses) and Intercorrelations of Scales, 2001-02

	Mean	sd	1	2	3	4	5	6
1. Symbolic Development	19.5	2.4	(85)					
2. Communication	46.7	7.2	65	(92)				
3. Mathematical/Physical Knowledge	27.0	4.1	62	81	(90)			
4. Working with Others	18.9	2.7	64	65	60	(86)		
5. Learning to Learn	25.0	2.8	65	70	68	77	(84)	
6. Conventional Knowledge	9.8	1.4	41	63	62	42	48	(63)

Note. N=7437.

Table 4. Means, Standard Deviations, Cronbach Alpha Reliability Estimates (in parentheses) and Intercorrelations of Scales, 2002-03

	Mean	sd	1	2	3	4	5	6
1. Symbolic Development	19.5	2.4	(86)					
2. Communication	47.1	7.0	66	(92)				
3. Mathematical/Physical Knowledge	27.2	4.0	63	81	(91)			
4. Working with Others	18.9	2.7	63	65	62	(87)		
5. Learning to Learn	25.1	2.7	64	71	69	77	(85)	
6. Conventional Knowledge	9.8	1.4	41	62	60	40	47	(68)

Note. N=7845.

Table 5. Means, Standard Deviations, Cronbach Alpha Reliability Estimates (in parentheses) and Intercorrelations of Scales, 2003-04

	Mean	sd	1	2	3	4	5	6
1. Symbolic Development	19.6	2.3	(86)					
2. Communication	47.3	6.9	66	(92)				
3. Mathematical/Physical Knowledge	27.2	4.0	62	82	(91)			
4. Working with Others	19.1	2.7	63	65	60	(87)		
5. Learning to Learn	25.2	2.7	65	69	66	77	(86)	
6. Conventional Knowledge	9.8	1.4	43	63	63	43	48	(69)

Note. N=7845.

Table 6. Percentage Distribution of Items on the Preschool Assessment for Six Years

	1998-99				1999-00				2000-01				2001-02				2002-03				2003-04			
	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)
Symbolic Development																								
1. Takes part in interactive play with others.	81	18	2	(4839)	85	14	1	(5913)	87	12	1	(7049)	86	13	1	(7483)	87	13	1	(8022)	88	11	1	(8666)
2. Uses play themes.	75	22	3	(4839)	81	17	2	(5908)	84	15	1	(7049)	84	15	1	(7483)	85	14	1	(8021)	86	13	1	(8663)
3. Represents ideas and feelings through movement.	64	30	6	(4839)	72	24	4	(5908)	74	23	3	(7046)	76	21	3	(7473)	75	21	3	(8017)	78	19	3	(8658)
4. Creates or responds to music.	70	26	4	(4839)	77	20	3	(5905)	77	20	3	(7043)	79	19	2	(7473)	77	20	2	(8017)	81	17	2	(8653)
5. Represents ideas through.	74	24	2	(4839)	80	18	2	(5902)	82	16	1	(7033)	83	16	1	(7475)	82	16	1	(8012)	84	15	1	(8650)
6. Uses art to convey feelings and ideas.	65	31	4	(4839)	70	26	4	(5903)	74	23	3	(7038)	74	22	3	(7471)	74	23	3	(8014)	76	21	2	(8657)
7. Talks about his or her creations.	69	26	5	(4839)	74	22	4	(5910)	79	18	3	(7036)	78	19	3	(7470)	80	18	3	(8013)	81	16	3	(8649)
Communication																								
1. Uses language to communicate ideas, feelings, questions, or to solve problems.	76	21	3	(4839)	80	18	2	(5909)	82	16	2	(7043)	82	17	2	(7471)	82	17	2	(8012)	83	15	2	(8652)
2. Uses language to pretend or create.	75	21	4	(4839)	80	17	3	(5908)	83	15	2	(7042)	83	15	2	(7464)	83	15	2	(8014)	85	13	2	(8658)
3. Responds to questions.	82	17	1	(4839)	85	14	2	(5909)	87	12	1	(7046)	85	14	1	(7470)	85	14	1	(8014)	87	12	1	(8659)

	1998-99				1999-00				2000-01				2001-02				2002-03				2003-04			
	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)
4. Follows directions.	76	22	2	(4839)	79	20	1	(5893)	79	20	1	(7041)	79	20	1	(7465)	78	21	1	(8008)	80	19	1	(8655)
5. Shows interest in books.	81	17	2	(4839)	86	13	1	(5899)	87	12	1	(7041)	87	12	1	(7466)	86	13	1	(8017)	87	12	1	(8659)
6. Uses picture cues and/or context cues to construct meaning from text.	72	25	4	(4839)	77	20	3	(5883)	81	17	2	(7030)	81	16	3	(7466)	81	17	3	(8008)	82	16	2	(8658)
7. Exhibits book-handling skills.	81	17	3	(4839)	87	11	1	(5906)	90	9	1	(7039)	89	10	2	(7462)	89	9	1	(8002)	90	9	1	(8660)
8. Reads environmental print.	58	35	7	(4839)	64	29	7	(5881)	67	26	6	(7026)	71	24	5	(7440)	71	24	5	(7995)	73	23	4	(8637)
9. Responds to texts.	71	25	4	(4839)	77	20	4	(5895)	80	17	3	(7029)	80	17	3	(7457)	81	17	3	(7998)	81	16	3	(8646)
10. Identifies letters in the alphabet	58	29	13	(4839)	63	27	10	(5877)	66	26	9	(7004)	67	25	9	(7439)	68	25	7	(7982)	70	23	7	(8623)
11. Recognizes that there is a relationship between letters and sounds.	35	36	29	(4839)	41	34	25	(5897)	48	32	20	(7027)	52	31	18	(7448)	53	32	15	(7986)	56	30	14	(8642)
12. Recognizes that written spellings represent spoken words.	55	30	15	(4839)	62	26	12	(5898)	67	22	11	(7026)	69	22	9	(7462)	70	23	7	(8001)	71	21	7	(8647)
13. “Reads” simple books.	52	29	20	(4839)	55	29	16	(5892)	57	27	15	(7019)	59	26	15	(7453)	60	27	13	(7995)	61	25	14	(8649)
14. Scribbles with intended meaning.	54	32	14	(4839)	61	28	11	(5888)	62	26	12	(7020)	64	26	10	(7434)	66	24	10	(7985)	68	23	9	(8746)
15. Uses some letters in writing.	51	30	19	(4839)	58	26	16	(5890)	61	24	16	(7031)	61	24	15	(7471)	64	24	13	(7996)	65	23	12	(8748)

	1998-99				1999-00				2000-01				2001-02				2002-03				2003-04			
	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)
16. Uses letter-sound correspondence to write.	17	25	58	(4839)	20	27	54	(5893)	23	27	50	(7011)	25	27	48	(7446)	27	27	45	(7984)	27	28	45	(8637)
17. Uses a variety of resources to facilitate writing.	29	39	32	(4839)	36	34	29	(5890)	40	34	26	(7022)	43	34	23	(7450)	46	33	21	(7996)	48	32	20	(8624)
18. Shares writing with others.	50	34	16	(4839)	57	31	12	(5894)	61	27	11	(7020)	62	28	10	(7466)	64	27	9	(8000)	66	26	8	(8643)
19. Recognizes first name in print.	91	7	1	(4839)	93	5	1	(5903)	95	4	1	(7027)	94	5	1	(7467)	94	4	1	(8005)	94	5	1	(8650)
Mathematical/Physical Knowledge																								
1. Classifies objects used in daily experiences or identifies similarities and differences.	74	23	3	(4839)	81	17	2	(5899)	84	15	1	(7035)	84	14	2	(7473)	84	15	1	(7994)	85	14	1	(8651)
2. Writes some numbers.	49	30	21	(4839)	54	28	18	(5910)	57	26	17	(7032)	57	26	17	(7470)	61	25	14	(8003)	61	25	15	(8644)
3. Uses numerical relationships to solve problems in daily life.	59	30	10	(4839)	67	26	8	(5903)	68	24	8	(7031)	70	23	7	(7476)	71	23	6	(8000)	71	22	6	(8652)
4. Orders things according to relative differences.	60	33	8	(4839)	69	26	5	(5907)	73	23	4	(7040)	73	23	4	(7471)	74	22	4	(8001)	76	21	4	(8654)
5. Makes one-to-one correspondence	72	23	5	(4839)	76	19	4	(5912)	80	16	3	(7044)	79	17	4	(7478)	81	16	3	(8009)	81	16	3	(8661)
6. Determines “same,” “more than,” and “less than” by comparing.	66	28	6	(4839)	71	24	5	(5907)	75	21	4	(7043)	76	20	4	(7474)	77	19	3	(8007)	77	19	4	(8658)

	1998-99				1999-00				2000-01				2001-02				2002-03				2003-04			
	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)
7. Uses spatial relationships in solving mathematical problems.	72	25	3	(4839)	78	19	2	(5906)	82	16	2	(7039)	82	15	3	(7470)	82	16	2	(8003)	83	15	2	(8660)
8. Shows understanding of sequence of daily events.	81	17	3	(4839)	85	13	2	(5908)	87	11	2	(7036)	86	12	2	(7468)	87	12	1	(8005)	88	10	2	(8657)
9. Experiments with objects to produce effects.	57	35	8	(4839)	61	32	6	(5898)	66	28	5	(7034)	70	25	5	(7463)	70	25	4	(8000)	71	24	4	(8651)
10. Explains own actions in manipulating objects.	61	31	8	(4839)	64	29	7	(5902)	70	24	6	(7030)	71	23	6	(7473)	71	24	5	(8001)	72	23	5	(8656)
Working with Others																								
1. Uses adults as resources.	79	19	2	(4839)	84	15	2	(5912)	85	14	1	(7050)	84	15	1	(7476)	85	14	1	(8020)	86	13	1	(8665)
2. Initiates conversation with familiar adults.	76	21	4	(4839)	82	16	3	(5902)	83	15	2	(7046)	83	15	2	(7475)	82	15	2	(8016)	84	14	2	(8666)
3. Works cooperatively with others in a give-and-take manner.	66	30	4	(4839)	70	28	2	(5897)	72	26	2	(7047)	70	27	2	(7473)	71	26	3	(8019)	73	25	2	(8666)
4. Uses peers as resources.	64	31	5	(4839)	70	26	4	(5891)	72	24	4	(7044)	72	25	3	(7468)	73	23	3	(8011)	75	22	3	(8661)
5. Shares resources with others.	68	29	3	(4839)	73	25	2	(5886)	76	22	2	(7029)	74	24	2	(7458)	75	23	2	(7983)	76	22	2	(8642)
6. Shows sensitivity and respect for others.	66	29	5	(4839)	70	26	4	(5901)	73	24	4	(7042)	72	24	4	(7474)	72	24	4	(8016)	75	22	4	(8655)

	1998-99				1999-00				2000-01				2001-02				2002-03				2003-04			
	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)	Almost Always	Sometimes	Not Yet/ Almost Never	(N)
7. Suggests appropriate solutions to conflicts.	49	38	13	(4839)	54	36	9	(5896)	58	33	9	(7036)	56	35	9	(7452)	57	34	8	(8003)	60	32	8	(8654)
Learning to Learn																								
1. Shows curiosity and interest.	83	16	1	(4839)	88	11	1	(5903)	89	11	1	(7050)	89	10	<1	(7476)	89	10	1	(8021)	90	9	1	(8666)
2. Explores and tries new things.	76	22	2	(4839)	82	16	1	(5904)	83	16	1	(7051)	84	15	1	(7476)	85	14	1	(8015)	86	13	1	(8662)
3. Takes responsibility for belongings.	77	21	2	(4839)	80	18	2	(5904)	83	15	1	(7048)	82	17	2	(7476)	81	18	1	(8017)	84	15	2	(8668)
4. Makes choices.	85	14	2	(4839)	88	11	1	(5899)	90	10	1	(7040)	89	11	1	(7476)	90	10	1	(8008)	91	9	1	(8664)
5. Stays focused and productive while playing/ working independently.	71	27	3	(4839)	76	21	3	(5908)	78	20	2	(7050)	76	21	2	(7475)	77	21	2	(8020)	79	19	2	(8666)
6. Stays focused and productive while playing/working in a group.	62	34	4	(4839)	70	27	3	(5908)	71	26	3	(7049)	70	27	3	(7475)	70	27	3	(8016)	72	25	3	(8663)
7. Shows pride in accomplishments.	85	14	1	(4839)	90	9	1	(5899)	91	8	1	(7049)	91	9	1	(7473)	91	9	1	(8010)	92	8	1	(8658)
8. Copes with frustrations and failure.	60	33	7	(4839)	63	32	6	(5906)	65	30	6	(7044)	64	30	5	(7470)	65	30	5	(8002)	68	27	5	(8655)
9. Talks about what he or she is learning.	67	28	6	(4839)	72	24	4	(5907)	75	21	4	(7045)	75	21	4	(7470)	76	20	4	(8007)	77	19	3	(8662)

	1998-99		1999-00		2000-01		2001-02		2002-03		2003-04	
	% Yes	(N)	% Yes	(N)	% Yes	(N)	% Yes	(N)	% Yes	(N)	% Yes	(N)
Physical Development												
1. Is physically active.	99	(4839)	99	(5914)	99	(7034)	99	(7460)	99	(7987)	99	(8651)
2. Demonstrates gross motor skills.	98	(4839)	99	(5913)	99	(7033)	99	(7459)	99	(7982)	99	(8649)
3. Demonstrates fine motor skills.	95	(4839)	96	(5904)	95	(7031)	95	(7457)	96	(7983)	95	(8643)
4. Appears to be healthy.	98	(4839)	99	(5909)	99	(7034)	99	(7450)	99	(7988)	99	(8641)
5. Practices personal hygiene.	98	(4839)	98	(5906)	97	(7030)	98	(7457)	97	(7983)	98	(8637)
Conventional Knowledge												
1. Tells first and last name.	97	(4839)	97	(5903)	97	(7043)	98	(7456)	98	(8005)	97	(8648)
2. Knows how to contact an adult family member.	47	(4839)	49	(5823)	48	(6971)	47	(7413)	47	(7933)	46	(8604)
3. Knows age.	98	(4839)	98	(5908)	98	(7034)	98	(7460)	98	(8001)	98	(8644)
4. Knows birthdate.	51	(4839)	57	(5847)	59	(6992)	62	(7428)	66	(7956)	65	(8612)
5. Recognizes some basic shapes.	95	(4839)	95	(5910)	96	(7022)	97	(7466)	97	(8000)	97	(8637)
6. Identifies basic colors.	97	(4839)	97	(5914)	97	(7044)	98	(7472)	98	(8013)	97	(8643)
7. Counts by rote to 10.	95	(4839)	95	(5904)	95	(7035)	95	(7468)	96	(8008)	95	(8639)
8. Recognizes and names some numbers to 10.	89	(4839)	89	(5898)	89	(7029)	88	(7455)	91	(8000)	90	(8638)